Chapter 11. AIRPORT LIGHTING and VISIBILITY AIDS

Section 1. GENERAL

11-1-1. AIRPORT LIGHTING

a. General Lighting. Operate airport lighting in accordance with associated tables except:

1. As requested by the pilot.

2. As required by facility directives or letters of agreement to meet local conditions or requirements.

3. As specialist deems necessary if not contrary to pilot's request or local directives.

b. Emergency Lighting. When it appears that an emergency has or will occur, provide for the operation of all appropriate airport lighting aids in accordance with local procedures and/or as required.

11-1-2. OBSTRUCTION LIGHTS

If controls are provided, operate the lights between sunset and sunrise.

11-1-3. ROTATING BEACON

If controls are provided, turn on the rotating beacon:

a. Between sunset and sunrise.

b. Between sunrise and sunset when the reported ceiling or visibility is below basic VFR minima.

11-1-4. APPROACH LIGHTS

Operate approach lights:

a. Between sunset and sunrise when one of the following conditions exists:

1. They serve the landing runway.

2. They serve a runway to which an approach is being made but aircraft will land on another runway.

b. Between sunrise and sunset when the ceiling is less than 1,000 feet or the prevailing visibility is 5 miles or less and approaches are being made to:

1. A landing runway served by the lights.

2. A runway served by the lights but aircraft are landing on another runway.

NOTE-
In the interest of energy conservation, the approach lighting system should be turned off when not needed for aircraft operations.

11-1-5. ALS INTENSITY SETTINGS

Operate intensity controls in accordance with the values depicted. (See TBL 11-1-1.)

ALS Intensity Setting		
Step	*Visibility (Applicable to runway served by lights)*	
	Day	*Night*
5	Less than 1 mile.*	When requested.
4	1 to but not including 3 miles.	When requested.
3	3 to but not including 5 miles.	Less than 1 mile.*
2	5 to but not including 7 miles.	1 to 3 miles inclusive.
1	When requested.	Greater than 3 miles.
* and/or 6,000 feet or less of RVR on the runway served by the ALS and RVR.		
Note.- Daylight steps 2 and 3 provide recommended settings applicable to conditions in ALS Intensity Settings.		

TBL 11-1-1

11-1-6. SEQUENCED FLASHING LIGHTS

Operate sequenced flashing lights when the visibility is less than 3 miles and instrument approaches are being made to the runway served by the associated ALS.

NOTE-
SFL's are a component of the ALS and cannot be operated when the ALS is off.

11-1-7. RUNWAY EDGE LIGHTS

Operate the runway edge light system(s) serving the runway(s) in use as follows:

a. Between sunset and sunrise.

1. For departures when an aircraft calls for airport advisory or requests the lights be turned on until the aircraft reports departing the airport area or 15 minutes after the last contact with the aircraft.

2. For arrivals when an aircraft calls for airport advisory or when the associated approach control advises that an aircraft is on approach until the aircraft reports/is observed clear of the runway or 15 minutes after last radio contact or arrival time.

b. Between sunrise and sunset, turn the lights on when the surface visibility is less than 2 miles as described in subparas 11-1-7a1 and a2.

c. The specialist considers it necessary, or it is requested by a pilot and no other known aircraft will be adversely affected.

d. Do not turn on the runway edge lights when a NOTAM closing the runway is in effect.

e. Alaska. The runway lights should remain on from the end of civil twilight to the beginning of civil twilight. If the runway lights are operated part-time in this period, broadcast a warning over the airport advisory frequency 2 minutes before turning the lights off.

11-1-8. CHANGING LIGHTED RUNWAYS

a. To switch lights:

1. Advise all known aircraft that the lights are to be changed, specifying the runway to be lighted.

2. Turn on the lights for the new runway 30 seconds before turning off the other runway lights, equipment permitting.

b. When a pilot requests that other than the favored runway be lighted and two runways cannot be lighted simultaneously, comply with the request if you have no knowledge of the lighted runway being in use. Advise all known aircraft.

11-1-9. SIMULTANEOUS APPROACH AND RUNWAY EDGE LIGHT OPERATION

Turn on the runway edge lights for the runway in use whenever the associated approach lights are on. If multiple runway light selection is not possible, you may leave the approach lights on and switch the runway lights to another runway to accommodate another aircraft.

11-1-10. MALSR ODALS

Operate MALSR/ODALS that have separate on-off and intensity setting controls in accordance with TBL 11-1-2 and TBL 11-1-3.

NOTE-
Application concerns use for takeoffs/landings/approaches and does not preclude turning lights on for use of unaffected portions of a runway for taxiing aircraft, surface vehicles, maintenance, repair, etc.

Two-Step MALS/One-Step RAIL		
Setting	*Visibility*	
	Day	*Night*
MALS HI-RAIL ON	Less than 3 miles.	Less than 3 miles.*
MALS LOW	When requested.	3 miles or more.
*At locations providing part-time flight service, the MALSR shall be set to low intensity during the hours of darkness when the station is unmanned.		

TBL 11-1-2

Three-Step MALS/Three-Step RAIL		
Setting	*Visibility*	
	Day	*Night*
3	Less than 2 miles.	Less than 1 mile.
2	2 to 5 miles inclusive.	1 to but not including 3 miles.*
1	When requested.	3 miles or more.
*At locations providing part-time flight service, the air-to-ground radio link shall be activated during the hours of darkness when the station is unmanned. If there is no radio air-to-ground control, the MALSR shall be set on intensity step #2 during the hours of darkness when the station is unmanned. (Reference- FAAO 7210.3, Para 10-6-4, Approach Light Systems.)		

TBL 11-1-3

11-1-11. HIRL ASSOCIATED WITH MALSR

Operate HIRL that controls the associated MALSR in accordance with the intensity setting in TBL 11-1-4.

HIRL Associated with MALSR		
Step	*Visibility*	
	Day	*Night*
5	Less than 1 mile.	When requested.
4	1 to but not including 2 miles.	Less than 1 mile.
3	2 to but not including 3 miles.	1 to but not including 3 miles.
2	When requested.	3 to 5 miles inclusive.
1	When requested.	More than 5 miles.

TBL 11-1-4

NOTE-
When switching from a given brightness step setting to a lower setting, rotation of the brightness control to a point below the intended step setting and then back to the appropriate step setting will ensure that the MALSR will operate at the appropriate brightness.

11-1-12. MEDIUM INTENSITY RUNWAY LIGHTS

Operate MIRL or MIRL which control the associated MALSR in accordance with the TBL 11-1-5.

HIRL Intensity Setting		
Step	*Visibility*	
	Day	*Night*
3	Less than 2 miles.	Less than 1 mile.
2	2 to 3 miles.	1 to 3 miles.
1	When requested.	More than 3 miles.

TBL 11-1-5

REFERENCE-
11-1-11 Note.

11-1-13. HIGH INTENSITY RUNWAY, RUNWAY CENTERLINE, AND TOUCHDOWN ZONE LIGHTS

Operate high intensity runway and associated runway centerline and touch-down zone lights in accordance with TBL 11-1-6.

HIRL, RCLS, TDZL Intensity Setting		
Step	*Visibility*	
	Day	*Night*
5	Less than 1 mile.*	When requested.
4	1 to but not including 2 miles.	Less than 1 mile.
3	2 to but not including 3 miles.	1 to but not including 3 miles.
2	When requested.	3 to 5 miles inclusive.
1	When requested.	More than 5 miles.
* and/or appropriate RVR/RVV equivalent.		

TBL 11-1-6

11-1-14. HIRL CHANGES AFFECTING RVR

Keep the appropriate approach controller or PAR controller informed, in advance if possible, of HIRL changes that affect RVR.

11-1-15. HIGH SPEED TURNOFF LIGHTS

Operate high speed turnoff lights whenever the associated runway lights are used for arriving aircraft. Leave them on until the aircraft has either entered a taxiway or passed the last light.

11-1-16. RUNWAY END IDENTIFIER LIGHTS

When separate on-off controls are provided, operate runway end identifier lights when the associated runway lights are lighted. Turn the REIL off after:

a. An arriving aircraft has landed.

b. A departing aircraft has left the traffic pattern area.

c. It is determined that the lights are of no further use to the pilot.

11-1-17. TAXIWAY LIGHTS

Operate taxiway lights serving the taxiways, or portions thereof, in use between sunset and sunrise before an aircraft taxies onto the taxiway (normally at the time taxi information is issued) and until it taxies off it.

11-1-18. VISUAL APPROACH SLOPE INDICATORS (VASI'S)

The VASI system with remote on-off switching shall be operated when it serves the runway in use and where intensities are controlled in accordance with TBL 11-1-7 and TBL 11-1-8.

VASI Intensity Setting, Two-Step System	
Step	*Period: Condition*
High	Day: Sunrise to sunset.
Low	Night: Sunset to sunrise.

TBL 11-1-7

VASI Intensity Setting, Two-Step System	
High	*Day: Sunrise to sunset.*
Medium	Twilight: From sunset to 30 minutes after sunset and from 30 minutes before sunrise to sunrise, and during twilight in Alaska. Note.- During a 1 year period, twilight may vary 26 to 43 minutes between 25 and 49 degrees N latitude.
Low	Night: From 30 minutes after sunset to 30 minutes before sunrise.

TBL 11-1-8

NOTE-
1. During a 1-year period, twilight may vary 26 to 43 minutes between 25 and 49 degrees N latitude.

2. The basic FAA standard for VASI systems permits independent operation by means of photoelectric device. This system has no on-off control feature and is intended for continuous operation. Other VASI systems in use include those that are operated remotely from the control tower. These systems may consist of either a photoelectric intensity control with only an on-off switch, a two-step intensity system, or a three-step intensity system.

REFERENCE-
FAAO 7210.3, Para 10-6-5, Visual Approach Slope Indicator (VASI) Systems.

11-1-19. VISIBILITY AIDS - GENERAL

a. Where RVR/RVV equipment is operational, irrespective of subsequent operation or nonoperation of navigational or visual aids for the application of RVR/RVV as a takeoff or landing minima, furnish the values for the runway in use in accordance with para 11-1-20, RVR/RVV.

b. Issue current touchdown RVR/RVV for the runway(s) in use:

1. When prevailing visibility is 1 mile or less regardless of the value indicated.

2. When RVR/RVV indicates a reportable value regardless of the prevailing visibility.

NOTE-
Reportable values are: RVR 6,000 feet or less; RVV 1-1/2 miles or less.

3. When it is determined from a reliable source that the indicated RVR value differs by more than 400 feet from the actual conditions within the area of the transmissometer, the RVR data is not acceptable and shall not be reported.

NOTE-
A reliable source is considered to be a certified weather observer, air traffic controller, or pilot.

4. When the observer has reliable reports, or has otherwise determined that the instrument values are not representative of the associated runway, the data shall not be used.

11-1-20. RVR/RVV

a. Provide RVR/RVV information by stating the runway, the abbreviations RVR/RVV, and the indicated value. When issued along with other weather elements, transmit these values in the normal sequence used for weather reporting.

b. When there is a requirement to issue an RVR/RVV value and a visibility condition greater or less than the reportable values of the equipment is indicated, state the condition as MORE than or LESS than the appropriate minimum or maximum readable value.

c. When a readout indicates a rapidly varying visibility condition (1,000 feet or more for RVR; one or more reportable values for RVV), report the current value followed by the range of visibility variance.

11-1-21. OPERATION OF LANDING DIRECTION INDICATOR

Align the landing direction indicator with the favored or designated runway.